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UNIVERSITY OF ALBERTA

THE RELATIVE IMPACT OF GENDER DISCRIMINATION ON THE CAREERS OF HEALTH ADMINISTRATORS 1970 - 1990

BY

DIANNE BRAY

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A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF HEALTH SERVICES
ADMINISTRATION

DEPARTMENT OF HEALTH SERVICES ADMINISTRATION
AND COMMUNITY MEDICINE

EDMONTON, ALBERTA
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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "The Relative Impact of Gender Discrimination on the Careers of Health Administrators", submitted by Dianne Bray in partial fulfilment of the requirements for the degree of Master of Health Services Administration.

Supervisor C. Hazlett

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Date 7 Oct '92

ABSTRACT

The main purpose of this study was to investigate and describe possible determinants of salaries for male and female graduates from the Master of Health Services Administration program at the University of Alberta. Specifically, the research tested the explanatory power of two opposing theories, human capital and discrimination theories in the varying incomes of male and female Master's graduates from the University of Alberta for the period 1970 to 1990.

The criterion for measurement for this investigation was first income and first level of responsibility after completion of the program, and current income and current level of responsibility.

The population for the study was restricted to those employed full-time from those 231 who had completed the Master of Health Service Administration program.

A regression analysis model was used to estimate the effects of each measured attribute of human capital (education and experience), employment setting, and gender on the dependent variable (first income and current income). Logistic regression analyses were performed on position titles in both first and current positions utilizing human capital variables, employment setting and gender.

The findings suggested that there was no statistically significant evidence of wage discrimination based on gender amongst first-time employees. Analysis of levels of first position responsibility revealed that men and women receive equal rewards for their investments in human capital. That is, men and women achieve their title through equal means.

Analyses of current income and current title

provided evidence of discrimination against women in their current positions. The study revealed that male graduates of the Master of Health Service Administration program tend to occupy higher positions in both hospitals and non-hospital settings than their female counterparts, and also receive higher reimbursement for equal work.

ACKNOWLEDGEMENTS

The idea for this research grew from a study conducted with Dr. C.B. Hazlett during a course in Statistics for Health Services Administration (HSA 530) and Research Methods in Health Services Administration (HSA 531).

The guidance of my supervisor, Dr. C.B. Hazlett, throughout this project was greatly appreciated, and in particular, I would like to acknowledge his contribution with the research design and methodology. His enthusiasm for this work encouraged me to persevere and promoted the quality of the research.

I would like to thank Drs. M. J. Long and R. Collins - Nakai, for their constructive criticism of the study and for the challenging ideas they presented.

I am indebted to Dr. G. Flowerdew for his assistance with the statistical process involved in this study.

Finally, I would like to thank my husband Dennis, my children, Gavin, Karen and Amy and my friends Kam Jugdev, Joan Pourbaix and Dr. Mary Lescoe-Long for their support and encouragement.

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CHAPTER I

INTRODUCTION

During the period of 1970 to 1990, women's participation in the overall labour force has grown significantly (Labour Canada, 1985; Lowe, 1983; Stevens & Boyd, 1980) as has women's participation in post secondary education (Fuchs Epstein, 1971; Kreps, 1971; Labour Canada, 1985; Wulff, 1987). Despite this shift, women remain under-represented at the senior management and executive levels in both the private and public sectors (Phillips & Phillips, 1983; Strober, 1982). It has also been established that despite anti-discrimination legislation and women's greater role in the market place, women's incomes have remained lower than those of their male counterparts both in the broad labour market and in more focused professional groups (Grabb, 1986; Lowe, 1983; Stockard and Johnson, 1985; Swafford, 1978; Treiman & Roos, 1983). In the broad labour market men have continued to earn almost twice as much as female workers (Ambert, 1976; Armstrong & Armstrong, 1983), and when incomes in professional groups are studied, the gap, while lessened, remains evident with female professionals earning 75% to 98% of male earnings (Adam & Baer, 1984; Guppy et al., 1987; Hagan,

1990; Kreps, 1971; Wulff, 1987).

This study was undertaken to determine what, if any, gender disadvantages existed among practitioners of health services administration by utilizing the University of Alberta's alumni as a case group for study purposes. The theoretical framework for this study has drawn on the human capital theory (Becker, 1964) and on market discrimination theory (Becker, 1957). Human capital theory primarily attributes lower earnings to less education and/or experience, and thus emphasizes the individual rather than social structural forces. As Lars Osberg explained,

> the human capital approach to earnings inequality argues that higher earnings are the result of past investments and that people choose which human capital investments to make in themselves on the basis of their own individual preferences. (Osberg, 1981, p.109)

Human capital theory argues that increased productivity-potential leads to increased earnings and that, in order to increase one's productivity-potential, individuals must invest in education and/or different experiences in the labour force. Under these postulates, the earnings differentials observed between the genders would reflect men having made higher levels of investment (Calzavara, 1988; Montagna, 1977). Studies accounting for differences in training and work experience between

the genders have found that approximately half of the income differential in many occupational categories can be accounted for by education and experience factors (Gunderson, 1982; Osberg, 1981; Suter & Miller, 1973). Calzavara indicated that "inadequate education and training are often barriers deterring women's advancement in the labour force" (1988, p. 295). It has also been suggested that women with higher levels of education have higher levels of market participation (Statistics Canada, 1980). In an attempt to account for the unexplained wage differential that remains after the impact of human capital variables have been accounted for, Becker (1957) and Blau and Juseneus (1976) have argued in favour of a market discrimination theory. According to this latter theory, discrimination may arise even in competitive markets if employers, co-workers or customers are so prejudiced that a group is employed only at a discount or in segregated occupations. Several studies have incorporated this theory and have found that when controlling for education and experience, some gender income disparity remains between professionals (Adam & Baer, 1984; Fielding, 1985; Hagan, 1990; Herfindal, Koda-Kimble & Bernstein, 1987; Kreps, 1983; Lorber & Ecker, 1983).

Wulff (1987) found that most women were older and

had greater number of years of experience in health related professions than men, prior to entering the health administration field. Given the prevalence of female nurses, physiotherapists, and occupational therapists that later enter the health administration field, the human capital theorists would argue that such women would have equal, if not higher, relevant human capital investment than most men. Thus incomes for these women should be at least comparable or even exceed those of their male classmates following graduation from programs in health administration. It follows that if significantly lower incomes do exist for women, then gender discrimination in Becker's terms, could be said to be in operation. As noted above, this study attempted to determine the relative impacts of these two propositions of human capital and discrimination when applied to a twenty year population of Health Services Administration, male and female Masters graduates, from the University of Alberta.

Typical studies of wage inequity have employed an omnibus approach relying on cross-sectional research and employing statistics gathered from the broad labour market. This paper contributes to a small, but expanding field of research that has examined wage disparities between men and women, over time, in a small, homogeneous

group. Such an approach increases the precision of comparisons, although at the cost of generalizability. Similar studies have been conducted using legal and medical professionals (Ferber & Loeb, 1973; Fox, 1985; LeSorte, 1971; Taylor, 1979; Guppy, 1989).

Study Objectives

The health administration sector, specifically, that which involved the alumni of the University of Alberta's Health Services Administration program, provided a suitable setting for testing the apparent validity of the human capital and market discrimination theories. It was known that in this sector one could expect to find sufficiently large proportions of both genders employed, and adequate measures of their human capital. Thus the major goals of this study were:

1. to collect information from graduates of the University of Alberta, Master's of Health Services Administration program pertaining to incomes levels, undergraduate degrees held, types and lengths of experience prior to entry into the program and, subsequent career tracks;
2. to ascertain whether or not, the human capital model alone reflected the alumni's earnings and career advancements, or if gender discrimination also existed.

Overview

Having introduced the nature and overall objectives of this study, chapter two is devoted to the review of

pertinent literature in the area of income disparity. Chapter three outlines the methods employed in the data collection and types of analyses undertaken in the study, and chapters four and five present the results of the tested hypotheses in terms of initial and current income, and initial and current positions for this population. The final chapter is devoted to a discussion of these results and includes recommendations for future research in the area of income disparity, particularly as it relates to small group studies such as this investigation.

CHAPTER II

REVIEW OF THE LITERATURE

Women's Role in the Labour Market

During the past 50 years, women's participation in the work force has risen from approximately 13% in 1901, to 22% in 1931, to over 50% by 1983 (Calzavara, 1988; Grabb, 1986; Lowe, 1983). The fastest growth period for female entrants into the labour market was between 1961 and 1971 when the female labour force grew by 11% (Stevens & Boyd, 1980). By the 1980's almost half of married Canadian women had entered the labour force, representing more than 40% of the total labour force (Armstrong & Armstrong, 1983; Grabb, 1986; Phillips & Phillips, 1983).

Income Disparity

Despite women's greater presence in the labour force, studies have shown that gaps exist between male and female incomes (Grabb, 1986; Swafford, 1978; Treiman & Roos, 1983). According to Phillips & Phillips (1983), the mean wage for employed Canadian women was 53% of that of the average male in 1911. By 1931 women's earnings had risen to 60% of male earnings and by 1978 it was 58%. Stockard and Johnson (1980) agreed with these latter

figures. Using median incomes of full time male and female workers they estimated that women's earnings in 1977 were 59% of those of male workers. They also demonstrated that if mean incomes were used, the gap between men's and women's incomes became even more disparate (eg. in 1974, the mean income of full time women workers was 45% of that of comparable males). Other authors support these findings. For example, Ambert (1976) and Armstrong and Armstrong (1983) found that Canadian men still earned almost twice as much as female workers in the late 1970's and early 1980's. Earlier, Kreps (1971), described women's earnings not only as lower than males in general, but also in specific occupational groups. For example, in the case of clerical workers, a group dominated by women, "the median earnings of females is less than two thirds that of males. The explanation frequently given for the male's higher wage is his greater experience on the job [Kreps, 1971, p. 2]."

Alternate Theories of Inequality

While most authors have agreed to the existence of a wage gap between the genders, there has been disagreement on its causes. Several theories have been developed to address the issue of wage differences between male and

female workers.

Some authors (Stevenson, 1975; Wendell, 1985) have explained this difference in terms of personal prejudice or aversion models which allow for preferential hiring policies that restrict women's movement in the labour force, thus creating a female "job ghetto" (with corresponding lower incomes). According to this model women have been clustered in lower paying jobs, mainly in the service sector, with little or no occupational mobility.

The monopoly model (Calzavara, 1988) has also been cited as an explanatory cause. The model is predicated on the belief that majority groups typically gain at the expense of disadvantaged groups. Thus it is argued that male industrialists have gained at the expense of a lower paid female work force (Stockard and Johnson, 1980).

Stockard and Johnson (1980) raised an important concern with the monopoly model. If employers deliberately held women in lower paying "job ghetto's" for economic gain, then an employer might well hire only lower wage female employees, undercutting the market and thereby forcing higher-priced competition out of business. As this has not generally occurred one must reason that the basis for discrimination involves more complex factors than those of only gender preference.

Another explanatory theory for gender income differential is that of the dual labour theory in which, unlike the human capital model, labour is conceptualized as composed of a number of unequal segments (Lowe, 1983). These segments reflect inequalities among workers, resulting in differing wages and in limited mobility between segments. The two segments are referred to by Lowe as the "marginal work world" and the "central work world", with the former encompassing occupations that are characterized by low wages, limited fringe benefits, little security and limited room for advancement. The central work world offers higher pay, benefits, and a career ladder, and in this sphere both employers and employees have degrees of power, unlike the marginal workers who are powerless[1]. Piore (1972) and Edwards (1979) argued that labour markets constituted the "principal means of segmenting the working class, because it is through labour market processes that workers are hired into their various jobs [Edwards, 1979, p. 180]."

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[1]. The two segments of the labour market are also referred to as the primary and secondary labour markets (Armstrong, 1984; Armstrong & Armstrong, 1990; Phillips & Phillips, 1983). As in Lowe's (1983) discussion of the central work world, the primary labour markets are characterized by good wages and working conditions, job security, opportunities for advancement and the presence of trade unions and/or professional associations. In the secondary sector (or the marginal work world) jobs are low paid and offer little security or room for advancement.

Wage differentials between men and women can also be explained by the preference or choice model (Calzavara, 1988; Lowe, 1983). According to this theory, women are segregated into particular occupations because they choose to be. "Most women choose jobs on the basis of their being complementary with house-hold activities and child raising [Calzavara, 1988, p. 294]."

While both of these latter theories may have helped to explain the broader picture of wage and occupational differentials amongst males and females or among different ethnic groups, they have not been used to explain differences in income and career opportunities between the genders within small, focused groups whose members have equal/comparable education, experience and duties, sharing similar career ladders and status.

Barriers to Higher Incomes

It has been verified that education and experience have accounted for a large proportion of the income differences between males and females (Calzavara, 1988; Lowe, 1983; Phillips & Phillips, 1983). "Inadequate education and training are often mentioned as one of the barriers deterring women's advancement in the labour force [Calzavara, 1988, p. 295]." Accordingly education systems have apparently conditioned and channelled women

into fields of study that lead to so-called "women's jobs" (eg., clerical, nursing and teaching). However, education has not necessarily channelled women into lower paying employment (Statistics Canada, 1980). Phillips and Phillips (1983) also concluded "higher educational attainment by women has led to higher expectations of income, of job satisfaction, and indeed even of the possibilities of a career [p. 39]."

Lack of commitment by women to their careers has been frequently cited as an explanation for income differentials between males and females (Calzavara, 1988; Lowe, 1983). Work interruptions for marriage and child rearing experienced by many women have prevented them from entering higher paid positions and inhibited job advancement. Calzavara reported that a larger salary differential existed between married women with children and comparable males than between unmarried females or females without children and comparable males (1988).

The hiring mechanisms of many firms and licensing regulations also have been important barriers to women's advancement in the labour force (and thus exerting an influence in creating earnings gaps between the sexes). Some women of equal ability may well be unable to compete for specific jobs because they are unaware of their existence. When firms recruit by word of mouth there is

a tendency to attract workers similar to those already employed. In this process, women can be disadvantaged due to their relative lack of contacts. Licensing policies in the primary or central sectors (Armstrong, 1984; Lowe, 1983) can also act as a barrier to members of the secondary or marginal labour force. These policies developed in response to the presence of unions and professional associations, necessitate that an individual be certified or licensed in order to be considered for employment and thus serve to restrict membership due to race or sex discrimination (Montagna,1977).

Women and Education

In the USA, Kreps (1971) found that women accounted for 20% of awarded bachelor and first professional degrees between 1900 and 1925; after World War II their proportion rose sharply (attaining 40% in the 1930's and 1940's). In 1950, women's share of first degrees was down to 24% (reflecting the large numbers of veterans of World War II who had returned to school). By 1965, the percentage of women had again climbed to 41% (Fuchs Epstein, 1971; Kreps, 1971).

Despite these changes in post-secondary education by the end of the 1960's, and despite that 37% of the labour force was female, women still only accounted for less

than 1% of American engineers, 2% of American executives, 7% of American physicians, 15% of American salaried managers and officials, and 21% of professionals outside the fields of health and education (Kreps, 1971), indicating that forces other than educational preparation were in effect.

However, societal shifts towards attaining more advanced degrees in the 1960's revealed that a much larger proportion were male recipients. By the mid 1960's, women accounted for only 36% of all master's degrees and only 13% of all doctorate degrees (Fuchs Epstein, 1971; Kreps, 1971); and within the graduate management educational system, Strober (1982) found that women accounted for only 11% of the graduating class from Stanford's MBA program in 1974.

Education and Income

Though certain studies (Calzavara, 1985; Gunderson, 1982; Suter & Miller, 1973) have shown that the lower economic status of women cannot be fully explained by lesser training and experience, post-secondary education seems to have lessened the earnings gap between male and female full-time workers. In a 1971 study of full-time employed economists, Osberg (1981) reported that as women achieved more education, the differential in earnings

between men and women lessened. Furthermore, the magnitude of this lessening was associated with age; for example, among PhD's between the ages of 35 and 44 years, the gender salary differential was $2,221; and between the ages of 25 and 34 years, $2,966.

However, Kreps (1971) has indicated that women with college degrees often have experienced less choice in the level of work available to them, and have tended to secure positions that actually utilize less than their full intellectual capabilities. Such a lack of available choice for women would inevitably affect incomes, probably sustaining, or even widening, the gap between male and female salary levels.

Women and Income in Professional Positions

Several studies have been conducted on women in professions (Adam & Baer, 1984; Fielding, 1985; Hagan, 1990; Herfindal et al., 1987; Kreps, 1983; Lorber & Ecker, 1983); in all some degree of income disparity was evident. In a study of male and female pharmacy post-graduates, Herfindal et al. (1987) found that gender rather than education appeared to be the determinant of managerial positions and income. Lorber and Ecker (1983) attributed the professional success of female physicians and the subsequent decline in the male/female earnings

gap in their study to the status of the internship hospital and the subsequent career networking that the internship facilitated. Adam and Baer (1984) studied graduates from an Ontario law school and found that the mean earnings of male and female lawyers five years after graduation were significantly different. Hagan (1990) in a study of Toronto lawyers found similar inequities which, when related to experience and other human capital investments, left a 25% wage gap attributable to gender discrimination.

Slightly different patterns were found among university faculty positions, in which the mean salaries of women ranged from 83.8% to 98.8% of the male mean incomes (Kreps, 1971). Kreps attributed some of these differentials to productivity based on the number of publications and research grants brought into departments. Guppy et al. (1987), in a study of pay inequity within Canadian universities, found that by computing adjusted ratios based on narrowly defined occupations within a single establishment, wage discrimination reduced the earnings of women relative to men by about 5%, leaving women who held university faculty positions earning 95% of their male counterparts.

Women in Health Services Administration

In a 1983 study of baccalaureate health administration graduates, it was discovered that both position and gender were related to significant differences in earnings and that at each position women consistently reported lower average earnings than men. In the highest administrative positions (such as chief executive officer), the differential was least, with females securing approximately 95% of male earnings. The earnings gap became more evident at low and middle management levels, women securing 78.5% of the "comparable" male earnings (Task Force on Undergraduate Education 1983). Wulff's (1987) study of graduates of the Masters program in Health Services Administration at the University of Alberta found that "at the initial stage of their administration career, it would appear that it was the males who were being discriminated as a greater proportion of them were at the lowest income level [p. 61]." However, she also found that men rose more rapidly in their careers and represented a higher proportion of the top management, and again usually earned more than comparable females. Robertson (1978) also found that male masters degree graduates from the Ottawa Health Services Administration program moved more rapidly into top administrative positions than those who were female.

Three different studies of undergraduate degree holders in health services administration discovered that important predictors of job title (and perhaps income) and career outcomes were gender, marital status, age, previous education, and prior health related experience (Auyash, Levitt & LaFrance, 1985; Joint Committee of the American College of Health Care Executives, 1990; Task Force on Undergraduate Education, 1983). The 1990 Joint Committee report noted that:

> The nature of employment after graduation is related to the background of the student. Older students with experience in the industry are more likely to be in middle management positions such as department director or assistant administrator. Younger students with no work experience are in entry level positions. [p.463]

Thus Wulff's findings of reverse discrimination might actually have reflected a differential health related experience between men and women prior to the graduate education.

One of the noted barriers to women's career advancement has been a lack of contacts with employers. Studies in health administration have indicated that this barrier might not be as problematic within most graduate health administration programs. A usual requirement has been for students to undertake a field residency period

for a period of not less than four months during their masters program (often between the first and second academic years). A 1990 study recognized that this internship requirement allowed the student to "gain exposure to health administration career options [Joint Committee of the American College of Health Care Executives, 1990, p. 465]", and served as a "bridge between the campus and the 'real' world [Auyash, Levitt, LaFrance, 1985, p. 41]". It also provided the means for networking as an important career enhancement tool - "a useful adjunct to even the finest programs [Joint Committee of the American College of Health Care Executives, 1990, p. 465]." As both male and female students have taken such residencies, regardless of their past work experience in the health field, both would have benefitted from the application of theoretical knowledge to the work place, and through improved or developed professional contacts and networks.

Summary of the Literature

The literature has indicated that, in recent years, women have a higher participation rate in the Canadian labour force and more have taken post secondary education than in previous decades. However, even when equally well educated women have competed in comparable

positions, the reward, or return on their investment has been lower than that of their male counterparts. This difference or "earnings gap" appears to have been reduced with more advanced education and in publicly funded, female dominated professions (Hunter, 1986; Lowe, 1983). From studies completed to date however, women in the field of health services administration either have made less investment in human capital, or have received a lower rate of return as their career has progressed. In other words though little or no degree of discrimination might exist for women in their early careers, some discrimination might be present as they have tried to advance their careers as health administrators.

CHAPTER III

METHOD

Statement of Problem

The main purpose of this investigation was to investigate and describe possible determinants of salaries for male and female graduates in Health Services Administration. Specifically, the study tested the explanatory importance of human capital and market discrimination theories in explaining the varying incomes of male and female graduates from the masters program in Health Services Administration (MHSA) at the University of Alberta for the period of 1970 to 1990.

Research Instrument

The data utilized in this investigation (see Appendix A) were derived from an alumni survey questionnaire which had been developed for purposes other than that of testing this study's hypotheses. However, the questionnaire had been developed on the basis of former studies (Hazlett & Katz, 1985; Wulff, 1987), where issues of face validity and response rates had been satisfactorily established. The most recent version resulted from modifications suggested by faculty, members of the alumni association, and currently enrolled

graduate students. The categories of responses were designed to be mutually exclusive and clearly worded to maximize reliability of responses within subject.

The survey was divided into 4 parts. Part A of the survey was designed to gather demographic and biographic information on the respondent. Solicited information included work experience and degree held prior to entry into the masters program.

Part B addressed the educational components of the program completion such as thesis/non thesis route, the length of time to complete all requirements, etc.

Part C was more detailed, soliciting information regarding the first position held after completion of the program. Issues addressed in this section included when the first work position was secured, the length of time spent seeking the first position, salary level in this initial position, as well as the size of the organization and type of assigned responsibility to the position. Part D was similarly developed as part C, but related to the subject's current position at the time of the survey.

Data Collection

The population of interest for this investigation comprised 132 graduates of the Master of Health Services Administration program at the University of Alberta.

This population was restricted to those respondents who were employed full time at the time of the survey and who had completed all master degree requirements.

The survey was mailed to 231 members of the Alumni Association, appearing on a master list held by the Department. An accompanying cover letter (Appendix B) outlined the purpose of the study and requested completion and early return (one week). Following a two week period, a second letter was mailed to all potential respondents reminding them to complete the survey and to return it immediately (Appendix C). Based on similar studies a response rate of 65% was anticipated (Task Force on Undergraduate Education, 1983:8; Wulff, 1987:7-28).

Measurement

Since it was suspected that differences in earnings between men and women would change according to time spent in the work force, the criteria for measurement for this investigation was first income after completion of the program course work and current income. To increase response rate, some need for sensitivity of declaring an exact salary was assumed, thus information regarding first and current incomes was solicited by presenting the individual with the following choice of income ranges:

(1) first income: less than $20,000; $20,000 to $29,999; $30,000 to $39,999; ..... $70,000 to $79,999; $80,000 or more;
(2) current income: less than $25,000; $25,000 to $34,999; $35,000 to $44,999; ..... $95,000 to $104,999; $105,000 or more.
For the purposes of analyses, midpoints of each income range were used to assign each alumnus's salary.

As it was also hypothesized that discrimination could exist in not only salary but job classification, a second criterion of career advancement was selected. Ranked levels of administrative responsibility in first and current positions was measured according to the following operationalized criteria (from highest to lowest): CEO or president; vice president; department head; executive assistant; there were two other employment position groupings - research officer/planner and "other" (eg., professors, consultants, etc.). However, for the purposes of analyses, only the first 4 employment positions or "titles" were studied as these four could be ranked according to the implied level of administrative responsibility.

The measures utilized for human capital investment and as predictors of income and/or employment position were:

(1) a dummy variable for health care education: i.e., students who had entered the MHSA program after completion of a traditional health sciences undergraduate

education such as nursing, physio-therapy, or laboratory sciences were assigned one, all others zero;

(2) a dummy variable for management education: i.e., students who had entered the MHSA program after completion of traditional management undergraduate preparation such as Commerce or Administration were assigned a value of one, all others a value of zero;

(3) health related employment experience prior to entering the MHSA program was measured as the number of years reported;

(4) management related employment experience prior to entering the MHSA program was measured as the number of years reported.

In addition to these measures of human capital investment, the number of years of experience working in the field of health services administration after finishing the MHSA course work requirements was also measured.

Time of first employment after completion of course work had been solicited in the survey instrument by presenting the respondent with the following choice of periods: 1970 to 1973; 1974 to 1977; 1978 to 1981; 1982 to 1985; 1986 to 1990. As had been done with salary, these ranges were used in order that individual respondents would feel less sensitive to being possibly

identified (and thereby hopefully increasing response rates as well). For the purposes of analyses, the midpoint of each period was used for calculating the number of elapsed years since course work was completed. For current income and current position, length of time since first position was used as a human capital measure to account for the number of years of employment experience gained since completing the program. For the alumnus initial salary and position, time since first position was treated as an inflation covariate (salaries at all levels having greatly increased between 1970 and 1990).

As human capital investment and/or discrimination might vary depending on the type of work setting in health administration, subjects were also surveyed as to the type of setting in which they had worked initially, or were working currently. As a wide variety existed, respondents were grouped into hospital and non-hospital work settings, thereby enabling adequate sample sizes for each of these two major groupings.

For the purposes of measuring discrimination, a dummy variable of gender was utilized: i.e., females were assigned a value of one, while males were assigned a value of zero.

Data Analysis Procedures

A linear regression analysis model was utilized to estimate the effects of the above attributes in predicting income levels in the first and current positions. Tests of interaction with the variable for "gender" were performed. As only "employment setting" showed a statistically significant interaction with gender, this particular interaction term was also included as a predictor.

To assess the impact of the above on job responsibility (both initial and current positions), logistic regression analyses were performed. Statistical testing involved stepwise regression with forced entry of the covariate, followed by the entry of all human capital variables as a block, and then the entry of the discrimination variable and interaction term.

CHAPTER IV

RESULTS OF ANALYSIS OF FIRST INCOME

In this chapter, the results of the previously described statistical hypothesis tests concerning first income and first position (or title) are provided. For the purposes of presentation, abbreviations have been utilized to designate the following variables:

(1) Sal.period = first employment period after completion of course work;

(2) HC.Ed = health care undergraduate preparation;

(3) Man.Ed = management undergraduate preparation;

(4) HC.Exp = health related employment experience prior to entering the MHSA program;

(5) Man.Exp = management employment experience prior to entering the MHSA program;

(6) Hosp. = work setting;

(7) Female = female;

(8) FHosp = an interaction of female and work setting.

Table 1 identifies the average first incomes of men and women after completion of MHSA course work at the University of Alberta. Without the use of any covariates no statistically significant differences were found in any period, with women earning between $.94 and $1.28 for every dollar earned by their male counterparts throughout

TABLE 1
MEAN FIRST INCOME OF GRADUATES
BY GENDER AND BY PERIOD OF IST EMPLOYMENT

PERIOD OF FIRST EMPLOYMENT	MEAN MALE INCOME (N)	MEAN FEMALE INCOME (N)	PROBABILITY
1970 - 73	$19,000 (10)	$20,555 (9)	.719
1974 - 77	$20,500 (20)	$26,250 (8)	.163
1978 - 81	$31,875 (16)	$38,571 (14)	.091
1982 - 85	$36,111 (9)	$34,090 (11)	.438
1986 - 90	$36,818 (11)	$36,250 (24)	.902
ALL GRADUATES (1970 - 90)	$27,878 (66)	$33,030 (66)	.015

N = 132

the first employment periods. This lack of statistical significance was, however, a function of the smaller sample sizes associated with specific periods and thus, corresponding lowered statistical power. Descriptively, it was evident that women achieved higher income than men during the first decade of graduates, and this led to an overall statistically significant difference ($p = .0152$) between women and men for the entire 20 year period of graduates.

To better assess market differential impacts of human capital investment and discrimination on income, a series of regression equations were computed. The dependent variable "first income" was regressed on human capital variables (undergraduate preparation, employment experience prior to entering the MHSA program) and on discrimination (female dummy variable), while controlling for the year of first employment after completion of course work (i.e.,inflation). The results of this regression solution are illustrated in Table 2. Having statistically controlled for the influence of inflation and human capital investment, discrimination, based on gender, was not found to be a statistically significant factor (probability = .107), though the raw data indicates that males earned an average $3,229 annually more than females.

TABLE 2
REGRESSION OF FIRST INCOME ON HUMAN CAPITAL INVESTMENT
CONTROLLING FOR INFLATION (YEAR OF FIRST EMPLOYMENT)

DESIGN	VARIABLE	B	F	SIG. F	R^2
COVARIATE	SAL. PERIOD [1]	- 1122.15	52.75	.000	.259
HUMAN CAPITAL	HC.EXP [2]	294.28	2.86	.093	.434
	MAN.EXP [2]	1092.83	8.88	.003	
	HC.ED [3]	9141.17	20.34	.001	
	MAN.ED [3]	- 1131.71	.17	.680	
DISCRIM.	FEMALE [4]	- 3229.98	2.62	.107	.445
	INTERCEPT	35785.99	289.47	.000	

N = 130

1. Sal.Period accounted for the number of years elapsed since time of commencing first position after completion of course work and was used as a control for inflation.
2. HC.EXP and MAN.EXP accounted for years of employment in the health care system or in management experience prior to entering the HSA program.
3. HC.ED and MAN.ED accounted for traditional undergraduate preparation.
4. Female was used as a measure of discrimination (1 = female; 0 = male).

The literature has pointed to a lessening of the gender earnings gap within employment sectors dominated by one gender (eg. nursing), and in publicly funded industries (Hunter, 1986; Lowe, 1983). Therefore it appeared prudent to examine the potential for income discrimination within employment sectors of the health administration field (Table 3). When setting (hospital versus non-hospital) was included in the regression equation, no evidence of discrimination could be inferentially drawn from the analysis. However, a descriptive evaluation of the Beta coefficients indicated that female HSA graduates, on average, earned approximately $1,100 less than males who had comparable human capital investment; however this overall loss is actually attributed to work in the hospital setting where females have earned some $5,100 less than their comparable male colleagues; in contrast, females have earned more than $2,900 more than their male counterparts in non-hospital settings.

Although these findings did not statistically verify the existence of discrimination in wages, differences in job allocation (or levels of job responsibility) were also examined. In the health care sector, as in other settings, the level of one's responsibility can impact on an individual's monetary return for human capital

TABLE 3
REGRESSION OF FIRST INCOME ON ALL PREDICTORS

DESIGN	VARIABLE	B	F	SIG. F	R^2
COVARIATE	SAL. PERIOD [1]	- 1108.08	48.93	.001	.259
HUMAN CAPITAL	HC.EXP [2]	306.88	3.05	.083	.434
	MAN.EXP [2]	1129.02	9.38	.002	
	HC.ED [3]	9187.51	20.39	.001	
	MAN.ED [3]	- 1087.03	.15	.692	
SETTING	HOSPITAL [4]	2363.22	.96	.329	.434
INTERACT	FHOSP [5]	- 3998.17	1.46	.228	.451
DISCRIM	FEMALE [6]	- 1073.17	.16	.688	.452
	INTERCEPT	34199.51	153.27	.000	

N = 130

1. Sal.period accounted for the number of years elapsed since the time of commencing first position after completion of course work and was used as a control for inflation.
2. HC.EXP and MAN.EXP accounted for years of employment in the health care system or in management experience prior to entering the HSA program.
3. HC.ED and MAN.ED accounted for traditional undergraduate preparation.
4. Hospital, a dummy variable, measured if first position was held in a hospital (1) or non hospital (0) setting.
5. Female-hospital was a dummy variable used as an interaction term for being female and employed in a hospital setting (1), all others being (0).
6. Female was used as a measure of discrimination (1 = female; 0 = male).

investment. Differences between men and women could potentially exist as a function of unequal access to higher paying positions.

As seen by the distribution of men and women across job titles (Table 4), 30% of the males and 21% of the females secured positions of department head or higher in their initial positions after completion of course work. Administrative trainee positions of Assistant Executive Director tended to be occupied more by males (29% male, 15% female), while more women were represented in the research/planning positions (44% female, 27% male). These differences were without any control considerations for previous experience and type of undergraduate education however.

The level of responsibility within a position was also matched to its salary and these results are provided in Table 5. While no statistically significant differences in salaries were observed between the graduates for the more responsible positions (CEO, Vice President and Department heads), differences in earnings were evident in the research officer and assistant executive positions ($P = .001$ and $P = .0005$ respectively), females having the greater earnings. Again such differences in income were without controlling for previous experiences or education.

TABLE 4
DISTRIBUTION OF FIRST JOB TITLE BY GENDER

TITLE [1]	MALE NUMBER	MALE PERCENTAGE	FEMALE NUMBER	FEMALE PERCENTAGE
CEO	4	6.0	1	1.5
VP	8	12.1	4	6.0
DEPT. HEAD	8	12.1	9	13.6
AED	19	28.7	10	15.1
RESEARCH	18	27.2	29	43.9
OTHER	9	13.6	13	19.7

N = 132

1. Title incorporated 6 categories which were ranked as follows: CEO or President = 1; Vice President VP) = 2; Department Head (DEPT.HEAD) = 3; Assistant Executive Director (AED) = 4; Researcher/planner (RESEARCH) = 5; OTHER incorporated any position not fitting the criteria of organization charts = 6.

TABLE 5
MEAN FIRST INCOME OF GRADUATES BY POSITION TITLE

TITLE [1]	MEAN MALE INCOME	MALE N	MEAN FEMALE INCOME	FEMALE N	PROB.
CEO	$35,000	4	$35,000	1	1.000
VP	$37,500	8	$25,000	4	.328
DEPT. HEAD	$38,750	8	$33,888	9	.508
AED	$21,842	19	$34,000	10	.001
RESEARCH	$21,111	18	$31,206	29	.001
OTHER	$32,777	9	$38,076	13	.281

N = 132

1. Title incorporated 6 categories which were ranked as follows: CEO or President = 1; Vice President VP) = 2; Department Head (DEPT.HEAD) = 3; Assistant Executive Director (AED) = 4; Researcher/planner (RESEARCH) = 5; OTHER incorporated any position not fitting the criteria of organization charts 6.

In order to determine the effect of human capital investment, as well as that of employment setting and gender, on the initial acquisition of responsibility, logistic regression analysis was utilized. The results (Table 6) indicated that the statistically significant predictors of first title were that of previous management experience and health related undergraduate preparation (prob. = .0073 and .0113 respectively). Gender (i.e., discrimination) did not predict a statistically significant proportion of variance. Again, this study could not statistically verify that initial job responsibility was affected by one's gender.

Discussion of Results

As noted in Chapter two, market discrimination theorists have suggested that discrimination may arise in competitive markets if employers are so strongly prejudiced against a group that they will employ members of that group only at a discount. Accordingly, in a profession dominated by a particular group, the hiring of an alternate group may occur only at a discount, or, the dominant group may demand a premium to work with the minority group. As many sectors within the health care industry are largely dominated by female employees, it could be argued that conditions exist for market

TABLE 6
LOGISTIC REGRESSION OF FIRST TITLE[1] ON ALL PREDICTORS

VARIABLE	PARAMETER ESTIMATE	CHI-SQUARE	PROBABILITY
GENDER [2]	.941	.555	.456
SAL. PERIOD [3]	- .063	1.585	.207
HC.EXP.[4]	- .061	1.261	.261
MAN.EXP.[4]	- .267	7.190	.007
HC.ED.[5]	- .859	6.417	.011
MAN.ED.[5]	2.063	3.304	.069
HOSPITAL [6]	- .668	.719	.396
FHOSP [7]	.709	.308	.578
INTERCEPT 1	1.535	2.443	.118
INTERCEPT 2	3.027	8.453	.003
INTERCEPT 3	4.779	16.678	.001

N = 64

1. First title incorporated 4 categories ranked as follows: CEO or President = 1; Vice President (VP) = 2; Department Head (Dept.Head) = 3; Assistant Executive Director (AED) = 4.
2. Gender was a dummy variable used as a measure of discrimination (1 = female; 0 = male).
3. Sal.period accounted for the number of years elapsed since time of commencing first position after completion of course work and was used as a control for inflation.
4. HC.EXP and MAN.EXP accounted for years of employment in the health care system or in management experience prior to entering the HSA program.
5. HC.ED and MAN.ED accounted for traditional undergraduate preparation.
6. Hospital, a dummy variable, measured if first position was held in a hospital (1) or non hospital (0) setting.
7. Female-hospital was a dummy variable used as an interaction term for being female and employed in a hospital setting (1), all others being (0).

discrimination against males.

Human capital investment theorists have argued that an individual will be reimbursed in accordance to his/her level of education and experience. In this study, when first income was regressed on human capital it appeared that human capital was being appropriately recognized and, discrimination was not necessarily verifiable.

Previous studies found that discrimination, based on gender, when it occurred tended to be at less senior positions. In other words, in the highest administrative positions such as Chief Executive Officer or Vice President, it would be less likely that any discrimination would be evident. The results of this study have tended to support this latter rationale.

In summary, wage discrimination was not found to be statistically significant among graduates entering their first position in Health Services Administration. Further, no significant evidence existed for the possibility of discrimination against women in the acquisition of job title, which if present would have had some bearing on income levels. On the contrary, this investigation tended to demonstrate that women earned more in Research Officer and Assistant Executive Director positions.

Thus, controlling for inflation and human capital

investment, little, if any gender discrimination was evident among Health Services Administration graduates in acquiring their first positions. Without these statistical controls, the conclusion would have been that women had an advantage in their initial jobs. It would appear then, that certain experiences evident in the larger labour market did not hold for this particular population.

CHAPTER V

RESULTS OF ANALYSIS OF CURRENT INCOME

The analyses of current income and current position/responsibility utilized the same statistical techniques and format as that employed in the analyses of first income and first job title (as given in chapter four). However, unlike chapter four, period of first position after completion of course work was no longer a surrogate measure for inflation, but rather used as a measure of the added years of experience acquired since completion of the MHSA program (and therefore was modelled as an additional measure within human capital investment).

Table 7 identifies the mean current (i.e.,1990) incomes of men and women master graduates of the Health Services Administration program. A statistically significant difference existed only between males and females in the second cohort (i.e., those that had approximately 14 years of experience). Across all cohorts, women earned between $.86 and $1.01 for every dollar earned by males. Again one must take into consideration the smaller numbers of these cohorts. It is possible that if the greater statistical power that was available for the total studied group had been

TABLE 7
CURRENT MEAN INCOME OF GRADUATES
BY GENDER AND BY PERIOD OF FIRST EMPLOYMENT

PERIOD OF FIRST EMPLOYMENT	MEAN MALE INCOME (N)	MEAN FEMALE INCOME (N)	PROBABILITY
1970 - 73	$82,222 (9)	$82,000 (5)	.983
1974 - 77	$80,000 (20)	$68,333 (9)	.040
1978 - 81	$72,500 (16)	$73,571 (14)	.876
1982 - 85	$66,250 (8)	$57,000 (10)	.084
1986 - 90	$54,545 (11)	$50,000 (21)	.432
ALL GRADUATES (1970 - 90)	$72,343 (64)	$62,282 (59)	.003

N = 123

available for each cohort, discrimination against women in the period 1982 - 85 would have been found. These findings, without the use of controls, demonstrated a statistically favourable economic position for males ($p = .0029$).

To maintain power and properly examine the hypothesis by use of appropriate cohorts, a series of regression equations were computed. The dependent variable "current income" was regressed on human capital variables (now including the variable Sal.period) and gender discrimination. As evident in Table 8, a statistically significant difference in incomes existed between males and females (probability = .033) accounting for women earning $7,818 less than equally qualified males. It is important to note however, that while statistically significant, gender discrimination added little to the overall R^2. Other than gender, only the amount of experience gained since completion of the MHSA program was found to be statistically significant (probability = .001) in determining income. This latter finding is a logical, therefore cross-validating, result (i.e., the more experience gained, the more likelihood one has for promotion or salary increments).

Again, it appeared prudent to examine the effects of

TABLE 8
REGRESSION OF CURRENT INCOME ON HUMAN CAPITAL INVESTMENT

DESIGN	VARIABLE	B	F	SIG. F	R^2
HUMAN CAPITAL	SAL.PERIOD[1]	1877.25	44.20	.001	
	HC.EXP [2]	182.16	.37	.539	
	MAN.EXP [2]	- 562.14	.46	.498	
	HC.ED [3]	2829.54	.62	.431	.337
	MAN.ED [3]	- 1949.20	.17	.673	
DISCRIM	FEMALE [4]	- 7818.87	4.67	.032	.363
	INTERCEPT	52005.01	193.89	.000	

N = 121

1. Sal.period accounted for the number of years of experience gained since completion of course work.
2. HC.EXP and MAN.EXP accounted for years of employment in the health care system or in management experience prior to entering the HSA program.
3. HC.ED and MAN.ED accounted for traditional undergraduate preparation.
4. Female was used as a measure of discrimination (1 = female; 0 = male).

employment setting on income (Table 9). The analysis determined gender, while again adding little to the overall R^2, was statistically significant (probability = .024) indicating that female HSA graduates, on average, earned approximately $11,000 less than males who had comparable human capital investment; this difference however, was less for women employed in the hospital setting.

Although the findings suggest discrimination, not all of the income disparity could be attributed to wage discrimination for equal work. Differences in job allocation and levels of responsibility therefore had to be examined. Table 10 displays the distribution of men and women across job titles.

As indicated males represented a larger percentage than women in the two most senior positions (61% to 29%), while women were more heavily represented at the mid-managerial level of department head (28% to 7.5%). Such disproportionate representation between the genders in terms of assigned responsibility would help explain the previous differential income levels. This type of distribution also begged the question, if human capital was rewarded equally, would the distributions across job classifications be so different between the genders?

TABLE 9
REGRESSION OF CURRENT INCOME ON ALL PREDICTORS

DESIGN	VARIABLE	B	F	SIG. F	R^2
HUMAN CAPITAL	SAL.PERIOD[1]	2004.01	49.71	.001	.337
	HC.EXP [2]	142.41	.23	.627	
	MAN.EXP [2]	- 460.94	.31	.574	
	HC.ED [3]	2877.27	.66	.417	
	MAN.ED [3]	- 2009.39	.19	.661	
SETTING	HOSPITAL [4]	2689.88	.45	.501	.361
INTERACT	FHOSP [5]	6433.23	1.24	.267	.363
DISCRIM	FEMALE [6]	-11324.11	5.19	.024	.391
	INTERCEPT	49102.38	115.55	.000	

N = 121

1. Sal.period accounted for the number of years of experience gained since completion of course work.
2. HC.EXP and MAN.EXP accounted for years of employment in the health care system or in management experience prior to entering the HSA program.
3. HC.ED and MAN.ED accounted for traditional undergraduate preparation.
4. Hospital, a dummy variable, measured if current position was held in a hospital (1) or non hospital (0) setting.
5. Female-hospital was a dummy variable used as an interaction term for being female and employed in a hospital setting (1), all others being (0).
6. Female was used as a measure of discrimination (1 = female; 0 = male).

TABLE 10
DISTRIBUTION OF CURRENT JOB TITLE BY GENDER

TITLE [1]	MALE NUMBER	MALE PERCENTAGE	FEMALE NUMBER	FEMALE PERCENTAGE
CEO	15	22.7	3	4.9
VP	25	37.9	15	24.5
DEPT. HEAD	5	7.5	17	27.8
AED	1	1.5	5	8.2
RESEARCH	5	7.5	5	8.2
OTHER	13	19.6	16	26.2

N = 125

1. Title incorporated 6 categories which were ranked as follows: CEO or President = 1; Vice President (VP)= 2; Department Head (DEPT.HEAD) = 3; Assistant Executive Director (AED) = 4; Researcher/planner (RESEARCH) = 5;OTHER incorporated any position not fitting the criteria of organization charts = 6.

As before, the level of responsibility within a position was matched to its salary and these results are provided in Table 11. Statistically significant differences were observed only in the job classification "other". As this classification is an umbrella term for those positions not falling into known levels of responsibility on organization charts (i.e., containing groups such as academics, consultants and private practice professionals), the difference could not be said to be meaningfully interpreted in terms of level of responsibility and discrimination.

To determine the effect of human capital investment, employment setting and gender on the acquisition of job titles, a logistic regression analogous to that used in the analysis of first position title was employed. The results (Table 12) indicated that the amount of experience gained since completion of the MHSA program and gender were the only statistically significant predictors of acquisition of title (probability = .0003 and .0036 respectively). For current positions, statistically higher proportions of males had attained a higher "status" than females with equivalent human capital investment.

TABLE 11
CURRENT MEAN INCOME OF GRADUATES BY POSITION TITLE

TITLE [1]	MEAN MALE INCOME	MALE N	MEAN FEMALE INCOME	FEMALE N	PROB.
CEO	$81,333	15	$80,000	2	.928
VP	$74,400	25	$79,333	15	.345
DEPT. HEAD	$66,000	5	$59,411	17	.271
AED	$70,000	1	$50,000	5	.312
RESEARCH	$48,000	5	$52,000	5	.471
OTHER	$70,000	13	$53,666	15	.032

N = 123

1. Title incorporated 6 categories which were ranked as follows: CEO or President = 1; Vice President (VP) = 2; Department Head (DEPT.HEAD) = 3; Assistant Executive Director (AED) = 4; Researcher/planner (RESEARCH) = 5;OTHER incorporated any position not fitting the criteria of organization charts = 6.

TABLE 12
LOGISTIC REGRESSION OF CURRENT TITLE[1] ON ALL PREDICTORS

VARIABLE	PARAMETER ESTIMATE	CHI-SQUARE	PROBABILITY
GENDER [2]	3.022	8.478	.003
SAL. PERIOD [3]	- .177	13.213	.001
HC.EXP.[4]	.029	.471	.492
MAN.EXP.[4]	- .047	.189	.663
HC.ED.[5]	- .678	.154	.214
MAN.ED.[5]	.017	.001	.981
HOSPITAL [6]	- .167	.065	.798
FHOSP [7]	-1.562	2.248	.133
INTERCEPT 1	-2.401	6.956	.008
INTERCEPT 2	.225	.073	.786
INTERCEPT 3	3.094	12.235	.001

N = 85

1. Current title incoporated 4 categories ranked as follows:CEO or President = 1; Vice President (VP) = 2; Department Head (Dept.Head) = 3; Assistant Executive Director (AED) = 4.
2. Gender was a dummy variable used as a measure of discrimination (1 = female; 0 = male).
3. Sal.period accounted for the number of years of experience gained since completion of course work.
4. HC.EXP and MAN.EXP accounted for years of employment in the health care system or in management experience prior to entering the HSA program.
5. HC.ED and MAN.ED accounted for traditional undergraduate preparation.
6. Hospital, a dummy variable, measured if current position was held in a hospital (1) or non hospital (0) setting.
7. Female-hospital was a dummy variable used as an interaction term for being female and employed in a hospital setting (1), all others being (0).

Discussion of Results

Wulff (1987) and Robertson (1985) suggested that men rose more rapidly in their careers in health administration than their female counterparts, resulting in a discrepancy of earned income. Their findings were further supported by these analyses of current incomes. In the second and forth first employment cohorts (i.e., 1974 - 1977 and 1982 to 1985 respectively) females earned $ .86 for every dollar earned by a male, a ratio in keeping with similar studies of professionals (Kreps, 1971). In the remaining cohorts, women's incomes ranged from $ .92 to $1.01 for every dollar earned by males.

When sectors of the health care market were examined, there was statistical evidence that income discrimination existed in both the hospital and non-hospital sectors, women appearing to receive less reimbursement than men. However, the analysis of current titles and incomes confirmed the finding of Task Force on Undergraduate Education, (1983) i.e., revealing no statistically significant differences in earnings at the highest levels within organizations, but an unequal distribution of men and women existing across job titles/responsibility. As market discrimination theorists point out, this unequal access to positions would be causal in the overall lower earnings of women.

This differential acquisition of increasing responsibility can be properly regarded as discrimination against females in their career paths in health administration provided proper controls for human capital are concurrently controlled.

While these statistical analyses have supported arguments that women are victims of wage and career advancement discrimination, it must be recognized however, that this study did not measure work interruptions which commonly affect women (Wulff, 1987); even though this study properly controlled for the subsequent reduced number of years of work experience after graduation that these interruptions produce, no controls were available for the continuity aspect that is often regarded as also critical in achieving senior promotions. Notwithstanding this shortcoming, in a 1985 study of these same alumni Hazlett and Katz found that 81% of graduates had no work interruptions whatsoever, and of the remaining 19%, only 8% had lost more than one year to work interruptions. Given this, it is not unreasonable to conclude that work interruptions accounted for little lost human capital, and therefore would be unlikely to be largely accountable for the income disparity.

A further qualifier must be considered before

concluding that discrimination was primarily responsible for the differences between the genders. Job performance standards of both groups were not measured in this study. As only years of experience and education were utilized to measure human capital investment, it remains possible that systematic differences between the genders could have occurred in the amount of commitment, effort, and/or quality of work that these two groups put forth while gaining their work experience.

Despite this shortcoming, subjective measures of job performance were utilized. Results of the 1990 alumni survey[2] indicated that respondents believed that they were successful in meeting objectives set by their employers. Within the study population, 27% of both males and females reported that they were often successful while 68% of women and 70% of men reported feeling highly successful in meeting employer goals. Therefore, using this measure, it is reasonable to conclude that systematic differences between the genders, in job performance do not account for differences in

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[2]. Data for the study at hand were selected from the results of a larger study of the HSA alumni association in which respondents were asked if they felt that they were successful in meeting objectives set by their employers (see appendix A). Potential responses to this question were:not successful; rarely successful; often successful and; highly successful.

income.

In conclusion, evidence does exist that female graduates of the MHSA program, employed in full time positions, did not receive comparable pay for comparable work, and were not afforded the same career opportunities as their male counterparts.

CHAPTER VI

CONCLUSIONS

Limitations

This investigation had a number of methodological limitations. First, the population studied was limited to the Alumni of the University of Alberta Masters program in Health Services Administration. Therefore the results are not necessarily generalizable to other Canadian or American graduates of health services administration programs, or other professional graduate programs or the broader labour market.

As only active members of the alumni were solicited, and of these only 57% chose to respond, one must question whether any systematic differences existed in the success rates of respondents and those who were no longer actively involved in the Alumni Association. However, to estimate the representativeness of the respondents, a Goodness of Fit test was done between the proportion of respondents in each 4 year cohort to that of the actual proportion that were graduated over the 20 year history of the Health Services Administration masters program. The Goodness of Fit hypothesis was not rejected and therefore one could not demonstrate that the respondents were atypical of all graduates.

Additional limitations related to design flaws in the questionnaire. The lack of any measure of work interruptions and performance level introduced a lack of precision. The size of income categories - spanning $10,000 - may have been problematic also. If males and females were not equally distributed across the abstractly defined income intervals, or if the highest income group ($105,000 and above) was found to underestimate the ceiling at the CEO or "other" level of one gender then the results may be under or over estimates of discrimination impact.

Conclusions

Two dimensions of success of Health Service Administration graduates were hypothesized for this investigation: income (initial and current) and level of responsibility (initial and current job title). A linear regression model was utilized in the analysis of the former controlling the effect of inflation (first position income only), and enabling the estimation of the effects of both human capital and gender discrimination on income. Logistic regression analyses were utilized to assess the impact of human capital and discrimination on job title/responsibility. According to the human capital theory, the financial reward and level of position that

an individual would receive in the labour market would be in direct proportion to the amount of time he or she had invested in the acquisition of training and experience. Theorists of this school have suggested that earnings disparity between identifiable groups (such as men and women) were the result of unequal investments in this type of human capital.

Becker (1957) proposed that a portion of the male/female earnings gap was the direct consequence of discrimination. Discrimination took two forms in which members of certain groups (usually based on ethnicity or gender) received lower incomes as a result of group membership, or were denied access to higher paying positions. In the context of this study, the theory postulated that professional women might well receive less pay than equally qualified males for the same work, or that these women might be held in a lower paying positions than males with similar qualifications.

Utilizing both of these theories in the chosen statistical models, this study found little evidence of wage discrimination in the first position held after completion of MHSA course work, and it appeared that individuals were being appropriately rewarded for their investment in human capital. However, the study found evidence of discrimination against females, both in

salary and career opportunities for currently held positions. The human capital theory did not account for all of the income disparity in current positions.

Besides those limitations already noted, the apparent reversal from no evidence of discrimination against women in first positions to evidence of discrimination in current positions might be attributable to the degree of networking within careers by both genders. As discussed in Chapter two, by the 1980's, married women represented more than 40% of the total labour force (Armstrong & Armstrong, 1983; Grabb, 1986; Phillips & Phillips, 1983). Stockard and Johnson (1980), report that despite the increase in labour force participation, women usually balance their work and family roles, and are different than men in this aspect. Women according to Calzavara (1988), may choose or seek positions which complement their family life. This dual commitment to work and home life can hinder a woman's occupational mobility through a reduction of marketing opportunities. Hence, although the woman has not necessarily experienced work interruptions, she might not be as able or as willing to work the long hours or attend after "office hours" activities often associated with senior level positions. Existing senior management, sensing the dual commitment, may be reluctant to hire

women into the positions which they perceive as requiring this type of extended commitment.

Further, this reversal from no discrimination against women in first positions to evidence of discrimination in current positions might also be attributable to job assignment/promotion practices. These practices according to Calzavara (1985) can bar women from equal access to opportunities for job mobility. To date, studies (Armstrong & Armstrong, 1990; Calzavara, 1985; Lowe, 1988) have acknowledged that the role of power in job assignment.promotion practices has kept many women out of board rooms and in less visible positions (such as research officers), however, the nature of these practices have not been assessed.

This research, while noting that recruitment and promotion practices within the health care sector are also possibly affected by issues of power, did not seek the information necessary to address this issue. Notwithstanding this shortcoming, as discrimination is one manifestation of power (Calzavara, 1985), the measures used in this study do account for at least a portion of the effects of power.

Some Implications for Further Research

Given the present findings of discrimination against

females in current positions, it would now be appropriate to conduct a longitudinal study assessing incomes at various stages of career development and analyze for inflection points. This would provide a more accurate picture of the income paths and possible sources of discrimination amongst both male and female graduates in health services administration.

Further, given the paucity of literature concerning job assignment/promotion practices and their effects on professional career development, any longitudinal study should capture the career paths of graduates. This would provide a clear picture of possible sources of power and discrimination operating within organizations in terms of job assignments and promotions amongst male and female graduates in health services administration.

It is also apparent that such a study should include the career tracks of graduates from other health services administration programs in Canada. This would provide evidence of unique characteristics of employment markets and of the educational programs which might contribute to career success. In such a study, factors such as annual job performance ratings, locale of position (rural/urban), personal characteristics such as marital status and family obligations, and life style preferences would allow for a clearer identification of the reasons

for one's individual success patterns that may also interact with one's gender and human capital investment.

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APPENDIX A

Questionnaire

University of Alberta Health Services Administration Alumni Survey

Please check the most appropriate response to or provide a short answer for each question

Part A. Personal and Professional Information

1. Gender:

   [ ] Male [ ] Female

2. What was *and* is your age?

Entering HSA		Now
[ ]	Under 25 years	[ ]
[ ]	25 to 35 years	[ ]
[ ]	36 to 45 years	[ ]
[ ]	46 to 60 years	[ ]
[ ]	Over 60 years	[ ]

3. Before you entered the HSA program, indicate the number of years of employment in the listed fields?

   a. health related field: _____ yrs. ---> Number of these years in a managerial level or higher: _____ yrs.

   b. non health related field _____ yrs. ---> Number of these years in a managerial level or higher: _____ yrs.

4. With what degree(s) did you enter the HSA program?

   _____

5. How many years elapsed between the time you were accepted into the HSA program and the time you obtained your previous university degree?

   _____ yrs.

Part B. Completion of HSA Program

1. Through your education did you attain a:
   - [ ] Master degree
   - [ ] Diploma (Go to Part C)
   - [ ] Both
   - [ ] Did not finish diploma/degree requirements (Go to Part C)

2. If you have completed all the requirements, how long did this take you to complete (including the two years in the program)?

3. If you are a Master's graduate did you complete:
   [ ] Thesis [ ] Major Paper

Part C. First Position After Completing Courses for HSA

1. After completing the HSA program (i.e., course work), did you:
   - [ ] Actively seek employment in a health related field
   - [ ] Not have to apply for first position
     - [ ] returned to former employer
     - [ ] offered position without application
   - [ ] Seek employment in a non health related field
   - [ ] Continue your education
   - [ ] Other, please specify:

   _____

2. Was your first position:
   [ ] Full time [ ] Part time
   [ ] As yet have not started my first job (Go to Part C)

3. When did you secure this position:
   [ ] 1970 to 1973 [ ] 1982 to 1985
   [ ] 1974 to 1977 [ ] 1986 to 1990
   [ ] 1978 to 1981

4. For how long did you actively seek employment before securing your first position?
   - [ ] 0 to 3 months
   - [ ] 4 to 6 months
   - [ ] 7 to 9 months
   - [ ] 10 to 12 months
   - [ ] More than 1 year
   - [ ] Not applicable

5. Would you describe your first position as predominantly:
   [ ] line responsibility [ ] staff responsibility

6. What was your first position title?

   - [ ] CEO/President
   - [ ] Senior Manager/Vice President/ADM
   - [ ] Department/Division Head
   - [ ] Executive/Administrative Assistant
   - [ ] Planner/Analyst
   - [ ] Research Officer/Associate
   - [ ] Consultant
   - [ ] Professor
   - [ ] Continued School
   - [ ] Other: Please specify

   _____

Continued on back of page...

7. In what type of setting did you hold your first position?

[ ] Federal/Provincial Government
[ ] University/College
[ ] Consulting Firm
[ ] Private Practice
[ ] Community Health
[ ] Health care institution, specify (1) Type of facility:_____
(2) Number of beds: _____
[ ] Other: Please specify

_____

8. How many people staffed the organization and department in which you held your first position?

Organization/Institution	Department/Branch
[ ] Less than 50	[ ] Less than 10
[ ] Less than 100	[ ] 10 to 49
[ ] 100 to 499	[ ] 50 to 99
[ ] 500 to 999	[ ] 100 or more
[ ] 1000 to 1999	
[ ] 2000 to 2999	
[ ] Greater than 3000	

9. What was the annual salary range of your first position?

[ ] Less than $20,000	[ ] $50,000 to $59,999
[ ] $20,000 to $29,999	[ ] $60,000 to $69,999
[ ] $30,000 to $39,999	[ ] $70,000 to $79,999
[ ] $40,000 to $49,999	[ ] $80,000 or more

Part D. Current Employment

1. Is your present position:
[ ] Full time [ ] Part time
[ ] Unemployed (Go to Part C)

2. What type of position do you currently hold?

[ ] CEO/President
[ ] Senior Manager/Vice President/ADM
[ ] Department/Division Head
[ ] Executive/Administrative Assistant
[ ] Planner/Analyst
[ ] Research Officer/Associate
[ ] Consultant
[ ] Professor
[ ] Continuing School
[ ] Other: Please specify

_____

2. In what type of setting do you hold your current position?

[ ] Federal/Provincial Government
[ ] University/College
[ ] Consulting Firm
[ ] Private Practice
[ ] Community Health
[ ] Health care institution, specify: (1) Type of facility:_____
(2) Number of beds: _____
[ ] Other: Please specify

_____

3. How many people staff the organization and department in which you hold your current position?

Organization/Institution	Department/Branch
[ ] Less than 50	[ ] Less than 10
[ ] Less than 100	[ ] 10 to 49
[ ] 100 to 499	[ ] 50 to 99
[ ] 500 to 999	[ ] 100 or more
[ ] 1000 to 1999	
[ ] 2000 to 2999	
[ ] Greater than 3000	

4. What is your current range of annual salary?

[ ] Less than $25,000	[ ] $65,000 to $74,999
[ ] $25,000 to $34,999	[ ] $75,000 to $84,999
[ ] $35,000 to $44,999	[ ] $85,000 to $94,999
[ ] $45,000 to $54,999	[ ] $95,000 to $104,999
[ ] $55,000 to $64,999	[ ] $105,000 or more

5. How long have you been in your current position?

[ ] Less than 1 year	[ ] 4 years
[ ] 1 year	[ ] 5 years
[ ] 2 years	[ ] 6 to 10 years
[ ] 3 years	[ ] Over 10 years

Part E. Career Patterns/Mobility

1. How many positions have you held since completing your HSA coursework?

[ ] One level in one organization with little or no increase in responsibility
[ ] As above but with increasing responsibility
[ ] One level in two or more organizations
[ ] Two or more levels, one organization
[ ] Two or more levels, two or more organizations
[ ] Other (eg. continued school) Please specify:

2. In how many health related professional organizations do you currently have membership?

Provincial	National	International
[ ] 0	[ ] 0	[ ] 0
[ ] 1	[ ] 1	[ ] 1
[ ] 2	[ ] 2	[ ] 2
[ ] 3	[ ] 3	[ ] 3
[ ] 4 or more	[ ] 4 or more	[ ] 4 or more

3. In how many health related professional organizations do you currently hold an executive position?

Provincial	National	International
[ ] 0	[ ] 0	[ ] 0
[ ] 1	[ ] 1	[ ] 1
[ ] 2	[ ] 2	[ ] 2
[ ] 3	[ ] 3	[ ] 3
[ ] 4 or more	[ ] 4 or more	[ ] 4 or more

4. Including those of question 3, in how many health related professional organizations have you held an executive position over your entire career since graduation?

Provincial	National	International
[ ] 0	[ ] 0	[ ] 0
[ ] 1	[ ] 1	[ ] 1
[ ] 2	[ ] 2	[ ] 2
[ ] 3	[ ] 3	[ ] 3
[ ] 4 or more	[ ] 4 or more	[ ] 4 or more

5. Since graduating from the HSA program have you received any professional awards?

Provincial	National	International
[ ] 0	[ ] 0	[ ] 0
[ ] 1	[ ] 1	[ ] 1
[ ] 2	[ ] 2	[ ] 2
[ ] 3	[ ] 3	[ ] 3
[ ] 4 or more	[ ] 4 or more	[ ] 4 or more

6. Have you served as a preceptor to any of the following? (check those that apply)

HSA Graduate Programs	Non HSA Graduate Programs	Non HSA Undergraduate Programs
[ ]	[ ]	[ ]

7. Have you ever delivered any University lectures?

[ ] Yes [ ] No (if no, go to question 11)

8. Approximately how many lectures have you typically delivered per annum?

HSA Graduate Programs	Non HSA Graduate Programs	Non HSA Undergraduate Programs
[ ] 0	[ ] 0	[ ] 0
[ ] 1 to 2	[ ] 1 to 2	[ ] 1 to 2
[ ] 3 to 4	[ ] 3 to 4	[ ] 3 to 4
[ ] 5 or more	[ ] 5 or more	[ ] 5 or more

9. Have you taught any full time University courses?

[ ] Yes [ ] No (if no go to question 12)

10. How many full time Univeristy courses have you taught?

HSA Graduate Programs	Non HSA Graduate Programs	Non HSA Undergraduate Programs
[ ] 0	[ ] 0	[ ] 0
[ ] 1 to 2	[ ] 1 to 2	[ ] 1 to 2
[ ] 3 to 4	[ ] 3 to 4	[ ] 3 to 4
[ ] 5 or more	[ ] 5 or more	[ ] 5 or more

11. Have you served as a manuscript reviewer or a member of an editorial board for a journal or professional publication?

[ ] No [ ] Yes

12. Since graduation have you published any articles in a professional or scholarly journal?

[ ] No [ ] Yes, please specify number of articles: __

13. During the course of your career, how many times have you been engaged as a consultant to, or served as a member on, a health related committee or commission?

Provincial	National	International
[ ] 0	[ ] 0	[ ] 0
[ ] 1	[ ] 1	[ ] 1
[ ] 2	[ ] 2	[ ] 2
[ ] 3	[ ] 3	[ ] 3
[ ] 4 or more	[ ] 4 or more	[ ] 4 or more

14. How successful do you feel you have been in achieving your personal goals to this stage in your career?

[ ] Not successful
[ ] Rarely successful
[ ] Often successful
[ ] Highly successful

15. How successful do you consider yourself to be in having achieved objectives set by your employer?

[ ] Not successful
[ ] Rarely successful
[ ] Often successful
[ ] Highly successful
[ ] Not applicable

16. How important do you feel the HSA education was in securing:

Your First Position	Your Current Position
[ ] No effect	[ ] No effect
[ ] Slightly valuable	[ ] Slightly valuable
[ ] Valuable	[ ] Valuable
[ ] Critically Important	[ ] Critically Important
[ ] Not applicable	[ ] Not applicable

17. How important do you feel the HSA education was in preparing you for the responsibilities of

Your First Position	Your Current Position
[ ] No effect	[ ] No effect
[ ] Slightly valuable	[ ] Slightly valuable
[ ] Valuable	[ ] Valuable
[ ] Critically Important	[ ] Critically Important
[ ] Not applicable	[ ] Not applicable

Anything you would like to add to the above information regarding your career and/or your education in the HSA program would be most welcomed.

Thank you for your cooperation in completing this questionnaire.

APPENDIX B

Cover Letter

University of Alberta
Edmonton
Canada T6G 2G3

Department of Health Services Administration
and Community Medicine
Faculty of Medicine

13-103 Clinical Sciences Building, Telephone (403) 492-6407
Fax (403) 492-0364

November 1, 1990

Dear Member:

As you may know, the Health Services Administration Program will soon undergo accreditation by the Accrediting Commission on Education for Health Services Administration (ACEHSA). ACEHSA and the department are particularly interested in alumni career patterns as this helps to measure the effectiveness of the program in terms of outcomes.

In order to measure these outcomes, your assistance is needed in completing the enclosed questionnaire. Your cooperation in completing this survey and returning it within seven days will be greatly appreciated. As you can see from the nature of the questions, anonymity is assured. A summary of the results of this survey will be distributed to all Alumni members.

Please use the envelope provided. If you have any questions regarding this survey, please contact Dr. C. Hazlett at (403) 492-6408 or Ms. Jan Moore at (403) 498-8400.

Thank you for your help.

Sincerely

C. B. Hazlett, Ph.D.
Chairman

Ms. Jan Moore
President, HSA Alumni Association

CBH/jp
Encl.

APPENDIX C

Follow-up Letter

University of Alberta
Edmonton

Department of Health Services Administration
and Community Medicine
Faculty of Medicine

Canada T6G 2G3

13-103 Clinical Sciences Building, Telephone (403) 492-6407
Fax (403) 492-0364

November 19, 1990

Dear Member:

Re: HSA Alumni Survey

Due to the fact that anonymity has been maintained, we have no means for determining who has completed and returned the HSA Alumni survey that was mailed to you recently. If you have not already responded, could we impose on your busy schedule and ask you to complete the form today.

This year's accreditation criteria is very much focused on OUTCOMES, and that means outcomes measured in terms of graduates of the HSA Program. Your responses to the questions posed are of central interest to the Accreditation team. I apologize for the details asked (should you feel that too much or too sensitive information has been asked of you). We have tried very hard to make sure that under no circumstances will any staff member, student, alumni, or site visitor be able to figure out who answered questions in a certain way. Because of the detail, you might wonder if a particular combination of responses could in fact be developed which would identify an individual. If such could be done, theoretically, I can assure you that those unique combinations and permutations will not be analyzed and are not of interest to the staff or the Accreditation team.

Should you have already completed and returned the survey, please ignore this reminder - and our very sincere appreciation for your cooperation.

Kindest regards.

Sincerely

Clarke

C. B. Hazlett, Ph.D.
Chairman

CBH/jp